ETEC 501 Signature Paper

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The chosen class subject for this signature assignment in ETEC-501 is Direct Current (DC) Electronics. The existing Face-to-Face (F2F) version of this course is designated as ELE-11; and the proposed new hybrid version will be designated as ELE-11H. This hybrid course is the focus of this assignment.

The target audience will be community college students enrolled in for-credit courses. Most of the students will have identified their major as Electronics. Most Electronics students are males. 80% are Hispanic; 10% white; 8% black; 2% other. The average range of ages is from 18 to 40 years old. Concurrent enrollment high schools students may be as young as 16; and I have had a few other adult students in their 80's. All are fluent in English and proficient in basic math and writing skills. Less than 1% of students display any outward signs of having special needs, although learning disabilities can seldom be detected outwardly. Only 0.02% of students present me with official request forms for reasonable accommodation, with which I always gladly comply.

The duration of this four unit course is one full semester, which is 16 weeks at our college. This ELE-11H, hybrid course will meet asynchronously online for half the hours (studying lecture-type materials), while the remaining laboratory hours will be delivered in a traditional Face-to-Face (F2F) meeting format, to enable an in-person Community of Inquiry, in small group teams, where hands-on lab experiments will be performed. This must be done in our labs, where extensive equipment and parts are available, where instructor expertise is available to guide team members and answer questions.

The Learning Management System (LMS) that my college requires for this course is Blackboard (Bb). On Bb, I will have videos posted for student viewing, with closed captioning for the hearing impaired, and screen reading compatibility text elements for those with visual impairments. Transcripts will also be downloadable that cover the video programming materials, for anyone who wishes to have them. PowerPoint presentations will also be available in printable format. All students will be presented with a syllabus that will indicate the availability of reasonable accommodation for those with special needs. Information on securing those accommodations will be included in the syllabus with contact

information and links to campus resources, called Disabled Student Programs and Services (DSPS). Many features of Bb will be utilized to complement F2F resources. The ADA accessibility of this site must be tested and vetted by my college before it will be allowed to be used with students in the ELE-11H course.

ADDIE is my instructional design model. My instructional strategy is to employ scaffolding and modeling in my constructivist teaching implementation. I will use the Keller ARCS model to guide course design and delivery that will gain Attention, demonstrate Relevance, build Confidence, and increase Satisfaction in my students. My overarching goals are to elevate student retention, and increase average student performance. The ARCS model should help me reach those goals, and will guide my analysis, design, development, implementation, and evaluation processes, as well as subsequent course improvements. Below, there is a list of the specific criteria, called Student Learning Objectives (SLOs) for both the ELE-11, and ELE-11H, DC Electronics courses. At my college, I am required to assess each student with respect to each and every SLO. These published SLOs appear in the college catalog, within the ELE-11 course outline of record. They are also in my syllabus and are the criteria I will use with my rubric for judging student competence when the course has concluded, in either the F2F or hybrid environment. CTE courses are competency-based classes. Therefore, only students who demonstrate competence in each and every SLO will qualify to receive a passing grade. Only letter grades of "C, B, or A" are considered passing for Electronics majors. Students will have the entire semester to prove competence in each SLO. During the semester, remediation of SLO discrepancies is allowed and encouraged, so there are very few good reasons why any students should fail. While teachers are not allowed to grade based upon SLO performance, teachers must use them to screen for whomsoever is not qualified to receive a passing grade. Those students who demonstrate competence are graded based on other in-course performance indicators, such as quizzes, participation, homework and exams.

The SLOs for ELE-11 and ELE-11H are as follows. These SLOs all use an action verb from Bloom's Taxonomy and relate to a technical objective of learning in the ELE-11H, DC Electronics course. The cognitive, psychomotor and affective domains are assessed.

By the end of the course the competent student will be able to:

1 – **Demonstrate** the proper use of a Digital Multimeter (DMM) to measure voltage, current and resistance within an assigned DC circuit. (Bloom's Psychomotor and Affective domains)

2 - -Correctly **calculate** the solution to given Ohm's Law problems. (Psychomotor)

3 – Accurately and thoroughly **explain** the many processes of finding the total resistance in a complex series-parallel combination circuit. (Cognitive)

4 – Properly **explain** the use of Kirchhoff's Voltage Law for a given exemplary circuit. (Cognitive)

5 -- Appropriately **apply** Kirchhoff's Current Law to a given application circuit. (Cognitive &Psychomotor)

6 - **Assemble** a circuit on a solderless prototyping board to properly implement the functioning of a given schematic. (Cognitive &Psychomotor)

7 – Appropriately **discuss** the benefits of using one of the DC Network Theorem's. (Cognitive & Affective domains)

8 – Accurately **draw** the schematic of an RC Time Delay circuit using industry standard drafting practices. (Cognitive &Psychomotor)

The above SLOs are the criteria that I will use to judge student competencies (the page restriction of this assignment makes it impossible to properly justify and defend each of the above technical criteria for judging student competence in ELE-11H--each one could take one, or more, pages). For SLO judgment, I will use a four-point rubric that is based on a maximum of two points for accuracy and two

points for thoroughness of coverage for each SLO. Only one point can be earned from either category before the other category must earn a point, alternately applied up to four total points maximum. This has worked quite well in the past, and behaves much like a four point grading scale, where a total of zero or one are similar to an "F" or a "D," respectively, and are both unacceptable outcomes. SLO scores may never be averaged, and every total, for each SLO, must receive a score of two, or better, in order for a student to pass the course. Only after that threshold is met, can a passing letter grade be calculated and averaged from other weighted evidence of student performance.

My students will work in small groups in both the online and F2F portions of this hybrid course. This will build and strengthen the Community of Inquiry (CoI) that is integral to the course. According to Garrison (2011), "The CoI framework represents a coherent set of articulated elements and models describing a higher educational learning experience" (p. 27). Teams possess synergistic characteristics that support all members of the group—and open communications is the key. In a hybrid course, students feel less isolated than they might in a purely online environment, because they actually get together for interactions in lab, yet the three presences are still in play, online or F2F.

One of the reasons that my college demands the use of Blackboard is that our installation is considered to be ADA compliant; and all courses posted within Bb must be vetted for full ADA compliance before they are allowed to be used with students. So, even though I will make as many provisions for Closed Captioning, transcripts, and screen reader compatibility of my materials before posting them, my college will ultimately certify my entire Bb course before students use it. I think that this is because of so many law suits related to violation of ADA provisions; and my school does not want to pay for any such violations. According to Burke (2006), "The most important rule of thumb is that no individual be denied access or segregated from participation, and that equal provisions are made for all individuals with a documented disability" (p.19).

As the instructor of record, I will ultimately be responsible for any copyright infringement on my Bb site. So, I must work diligently to ensure that any fair-use exceptions to the copyright law are within

due bounds. According to Maddox (1995), "One of the least understood laws that affects or potentially affects perhaps 90% of the school teachers in the country is the Copyright Act. New technology makes copying cheaper and the public display of copyrighted media easier than ever before. But the ease of reproducing copyrighted works is also setting public educators up for prosecution in civil litigation for copyright violation" (p. 1). If I must, I will seek written permission from sources where there are questions related to fair-use, or if I want to reprint entire articles. Other qualifications still apply, so I must seek the advice of experts at my college to determine if I am likely to have no issues. As I am not a lawyer, I must rely on others with greater knowledge and experience at my college.

With all of these considerations, I will endeavor to make the learning experiences of my new ELE-11H course as beneficial as possible to students, including ease of use of Bb tools, with clear and concise directions, multiple representations of learning materials, per UDL. According to Edyburn (2010), "As UDL is aligned with response-to-intervention initiatives, it is important for the learning disability community to engage in dialogue about the principles and practices of UDL. Without a doubt, UDL holds considerable promise" (p. 40). I will perform all of my student assessments using integrated resources within Bb because of the time-saving features of automatic grading, and report generation, and more. I am very much looking forward to using the knowledge I have gained in ETEC-501 to eventually convert as many of my Electronics courses from strictly F2F, over to blended learning environments as possible. For my college, they get paid the same for blended learning courses as they do for F2F, yet hybrid courses reduce demand for already overbooked classrooms, and other school resources. This should also yield the benefits of increased freedom and autonomy to my students, including saved parking fees, reduced commuting time, less vehicle wear-and-tear, and fewer scheduling issues for my students, while maintaining the standards which we must uphold for school accreditation and positive student learning outcomes.

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